Data Science Assignment (Tap That Job)

Background:

You are a Data Scientist at Delta Bank, a company that is aiming to develop a customer experience vision. Part of this vision, one important pillar is the customers retention. As a result, the business officers would want to strengthen the relationship with the clients for keeping them engaged and assessing their needs and pain points. Due to the costs involved, it is not possible to target all the clients of the company. Along with the marketing team, the officers would like to understand why customers are leaving the bank and find the most probable churners.

Your challenge is to:

1. Identify the most probable clients that will churn in the future – *who are the customers that will leave the company?*
2. Identify & explain churn drivers – *what are the most important factors in churn?*

Details:

- You should follow the main steps for conducting the analysis: data preparation & exploration, model development & model explainability
  - Data preparation (if needed, depending on the algorithm used) & exploration:
    - Missing values imputation
    - Categorical encoding
    - Discretization
    - Remove duplicated, constant, quasi-constant features
    - Feature transformation
    - Outliers treatment
    - Feature scaling
  - Model development:
    - Train ML model that solves the business need
    - Test different algorithms
    - Test different set of parameters

- o Asses technical performance of the model
- ▪ Model explainability:
  - o Interpret model results
  - o Asses feature importance and impact
- ▪ Your submission should be a Python notebook (saved as html) containing the code for solving the tasks along with your interpretation
- ▪ Your submission can be in Romanian or English, depending on your university specialization
- ▪ The data needed for completing the assignment can be found in the TTJ Project.zip archive - you will find here a dataset (with both existing and customers that left the company) along with features description
- ▪ **Deadline: Friday, 7ᵗʰ April 23:59 – send the file to FlorentinaMarinela.Vlasceanu@bcr.ro with the subject [TTJ] Student Name (e.g. [TTJ] Vlasceanu Florentina)**